

Claims

What is claimed is:

- 1 1. A dispensing nozzle, comprising:
2 a substantially flexible body, the body having a first end configured to couple to a
3 fluid source, a second end configured to dispense fluid, and an interior cavity, the
4 interior cavity configured to allow at least a portion of the interior cavity to decrease in
5 diameter in response to a pressure change.
- 1 2. The nozzle of Claim 1, wherein the substantially flexible body includes a plurality
2 of capillaries, the capillaries configured to couple to a pressure control source.
- 1 3. The nozzle of Claim 2, wherein the capillaries extend longitudinally along a
2 substantial portion of the body.
- 1 4. The nozzle of Claim 2, wherein the capillaries extend annularly along a portion of
2 the body.
- 1 5. The nozzle of Claim 2, wherein the capillaries extend helically along a portion of
2 the body.
- 1 6. The nozzle of Claims 2 , wherein the fluid source is selected from the group
2 including a developer solution or de-ionized water.

1 7. The nozzle of Claim 1, wherein the substantially flexible body includes an
2 inflatable bladder disposed about a portion of the body, the bladder configured to couple
3 to a pressure control source.

1 8. The nozzle of Claim 7, wherein the inflatable bladder extends along a substantial
2 portion of the body.

1 9. The nozzle of Claim 7, wherein a substantially inflexible sleeve surrounds the
2 inflatable bladder to prevent radial expansion of the bladder.

1 10. The nozzle of Claims 7, wherein the fluid source is selected from the group
2 including a developer solution or de-ionized water.

1 11. The nozzle of Claim 1, wherein the pressure change is caused by a pump.

1 12. A photolithography system, comprising:

2 a photoresist applicator;

3 an exposure source;

4 a nozzle carrier; and

5 a dispensing nozzle coupled to the nozzle carrier, the dispensing nozzle

6 comprising:

7 a substantially flexible body, the body having a first end configured to

8 couple to a fluid source, a second end configured to dispense fluid, and an

9 interior cavity, the interior cavity configured to allow at least a portion of the
10 interior cavity to decrease in diameter in response to a pressure change.

1 13. The system of Claim 12, wherein the substantially flexible body includes a
2 plurality of capillaries, the capillaries configured to couple to a pressure control source.

1 14. The system of Claim 13, wherein the capillaries extend longitudinally along a
2 substantial portion of the body.

1 15. The system of Claim 13, wherein the capillaries extend annularly along a portion
2 of the body.

1 16. The system of Claim 13, wherein the capillaries extend helically along a portion
2 of the body.

1 17. The nozzle of Claims 13 , wherein the fluid source is selected from the group
2 including a developer solution or de-ionized water.

1 18. The system of Claim 12, wherein the substantially flexible body includes an
2 inflatable bladder disposed about a portion of the body, the bladder configured to couple
3 to a pressure control source.

1 19. The system of Claim 18, wherein the inflatable bladder extends along a
2 substantial portion of the body.

1 20. The system of Claim 18, wherein a substantially inflexible sleeve surrounds the
2 inflatable bladder to prevent radial expansion of the bladder.

1 21. The nozzle of Claims 18, wherein the fluid source is selected from the group
2 including a developer solution or de-ionized water.

1 22. The nozzle of Claim 12, wherein the pressure change is caused by a pump.

1 23. A method for dispensing fluid in a photolithography process, comprising:
2 providing a nozzle having a substantially flexible body, the body having a first
3 end configured to couple to a fluid source, a second end configured to dispense fluid,
4 and an interior cavity, the interior cavity configured to allow at least a portion of the
5 interior cavity to decrease in diameter in response to a pressure change.

6 coupling the first end to a fluid source;

7 decreasing the second end by changing the pressure;

1 24. The method of Claim 23, wherein providing a nozzle having a substantially
2 flexible body includes a plurality of capillaries configured to couple to a pressure control
3 source.

1 25. The method of Claim 24, wherein decreasing the second end includes
2 decreasing the pressure in the capillaries to cause the capillaries to constrict.

1 26. The method of Claim 23, wherein providing a nozzle having a substantially
2 flexible body includes an inflatable bladder disposed about a portion of the body, the
3 bladder configured to couple to a pressure control source.

1 27. The method of Claim 24, wherein decreasing the second end includes inflating
2 the bladder.